

What is claimed is:

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1. An isolated human EN-RAGE peptide.
 - 5 2. An isolated EN-RAGE peptide having the N-terminal amino acid sequence shown in Table 1.
 3. The protein of claim 2, wherein the peptide is encoded by the cDNA sequence of Genbank Accession No. AF 011757.
 - 10 4. An isolated nucleic acid molecule encoding EN-RAGE peptide.
 - 15 5. The nucleic acid molecule of claim 4, wherein the EN-RAGE peptide is human EN-RAGE.
 6. The nucleic acid molecule of claim 4, wherein the nucleic acid is DNA, cDNA or RNA.
 - 20 7. The nucleic acid molecule of claim 4, wherein the nucleic acid sequence is the sequence shown in Figure 5 (Seq I.D. No. 1).
 - 25 8. A replicable vector comprising the nucleic acid molecule of claim 4.
 9. The replicable vector of claim 8, wherein the vector is a prokaryotic expression vector, a yeast expression vector, a baculovirus expression vector, or a mammalian expression vector.
 - 30 10. A host cell comprising the vector of claim 8.
 - 35 11. The host cell of claim 10, wherein the host cell is a
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53. The method of claim ~~51~~¹, wherein the nucleic acid molecule is a ribozyme ~~or~~ an antisense nucleic acid molecule.
- 5 54. The method of ~~claim 47~~¹, wherein the compound is a compound identified by the screening method of claim 26.
- 10 3 55. The method of claim ~~47~~¹, wherein the inflammation is associated with delayed hypersensitivity, accelerated athrosclerosis, or lupus nephritis.
- 4 56. The method of claim ~~47~~¹, wherein the subject is a human, a primate, a mouse, a rat or a dog.
- 15 5 57. The method of claim ~~47~~¹, wherein the administration comprises intralesional, intraperitoneal, intramuscular or intravenous injection; infusion; liposome-mediated delivery; or topical, intrathecal, per rectum, gingival pocket, intrabronchial, nasal, oral, ocular or otic delivery.
- 20 6 58. The method of claim ~~47~~¹, wherein the compound is administered hourly, daily, weekly, monthly or annually.
- 25 7 59. The method of claim ~~47~~¹, wherein the effective amount of the compound comprises from about 0.000001 mg/kg body weight to about 100 mg/kg body weight.
- 30 8 60. The method of claim ~~47~~¹, wherein the subject is suffering from systemic lupus erythematosus, inflammatory lupus nephritis, septic shock or endotoxemia.

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61. The method of claim ~~47~~¹, wherein the subject is suffering from inflammation.

5 ⁹ ~~62~~. The method of claim ~~47~~¹, further comprising administering to the subject a pharmaceutically acceptable carrier during the administration of the compound.

10 ¹⁰ ~~63~~. The method of claim ~~62~~⁹, wherein the carrier comprises a diluent.

¹⁵ ¹² ~~64~~. The method of claim ~~62~~⁹, wherein the carrier comprises, a virus, a liposome, a microencapsule, a polymer encapsulated cell or a retroviral vector.

¹⁵ ¹² ~~65~~. The method of claim ~~62~~⁹, wherein the carrier is an aerosol, intravenous, oral or topical carrier.

²⁰ ¹³ ~~66~~. The method of claim ~~62~~⁹, wherein the compound is administered from a time release implant.

²⁵ ¹⁴ ~~67~~. The method of claim ~~47~~¹, wherein the subject is suffering from an autoimmune or inflammatory disorder in which recruitment of EN-RAGE-containing inflammatory cells occurs.

³⁰ ¹⁵ ~~68~~. The method of claim ~~47~~¹, wherein the subject is suffering from a bacterial-associated or other pathogen-associated infection.

69. A method for determining whether a compound is capable of inhibiting the ability of EN-RAGE protein to bind with a second protein which comprises:

³⁵ (a) admixing the EN-RAGE protein, the second protein

eukaryotic cell, a somatic cell, or a germ cell.

- 5 12. The nucleic acid molecule of claim 16, wherein the nucleic acid molecule is labelled with a detectable moiety.
- 10 13. The nucleic acid molecule of claim 12, wherein the detectable moiety is a fluorescent label, a digoxigenin, a biotin, an enzyme, a radioactive atom, a paramagnetic ion, or a chemiluminescent label.
- 15 14. A nucleic acid molecule consisting essentially of a unique fragment of an EN-RAGE nucleic acid sequence in a 3' to 5' orientation, wherein the sequence antisense to at least a portion of a gene encoding naturally occurring EN-RAGE peptide.
- 20 15. A composition comprising an EN-RAGE peptide or fragment thereof and a pharmaceutically acceptable carrier.
- 25 16. The composition of claim 15, wherein the pharmaceutically acceptable carrier is an aerosol, intravenous, oral or topical carrier.
- 30 17. An antibody immunoreactive with an epitope comprising a unique sequence of EN-RAGE.
18. A ribozyme which is capable of specifically cleaving EN-RAGE mRNA in a cell.
- 35 19. A transgenic nonhuman mammal whose germ or somatic cells contain a nucleic acid molecule which encodes an EN-RAGE peptide or a biologically active variant thereof, introduced into the mammal, or an ancestor thereof, at an embryonic stage.

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20. The transgenic nonhuman mammal of claim 19, wherein the nucleic acid molecule which encodes EN-RAGE polypeptide is overexpressed in the cells of the mammal.
- 5 21. The transgenic nonhuman mammal of claim 19, wherein the nucleic acid molecule encodes human EN-RAGE peptide.
22. The transgenic nonhuman mammal of claim 19, wherein the active variant comprises a homolog of EN-RAGE.
- 10 23. A transgenic nonhuman mammal whose germ or somatic cells have been transfected with a suitable vector with an appropriate sequence designed to reduce expression levels of EN-RAGE peptide below the expression levels of that of a native mammal.
- 15 24. The transgenic nonhuman mammal of claim 23, wherein the suitable vector contains an appropriate piece of cloned genomic nucleic acid sequence to allow for homologous recombination.
- 20 25. The transgenic nonhuman mammal of claim 23, wherein the suitable vector encodes a ribozyme capable of cleaving an EN-RAGE mRNA molecule or an antisense molecule which comprises a sequence antisense to naturally occurring EN-RAGE mRNA sequence.
- 25 26. A method for determining whether a compound is capable of inhibiting the interaction of an EN-RAGE peptide with a RAGE peptide, which comprises:
- 30 (a) admixing:
- (i) a RAGE peptide or an sRAGE peptide or a fragment of either thereof,
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(ii) an EN-RAGE peptide or a fragment thereof,
and

(iii) the compound;

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(b) measuring the level of interaction between the
peptide of step (a)(i) and the peptide of step
(a)(ii), and

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(c) comparing the amount of interaction measured in
step (b) with the amount measured between the
peptide of step (a)(i) and the peptide of step
(a)(ii) in the absence of the compound, thereby
determining whether the compound is capable of
inhibiting the interaction of the EN-RAGE peptide
with the RAGE peptide, wherein a reduction in the
amount of interaction in the presence of the
compound indicates that the compound is capable
of inhibiting the interaction.

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27. The method of claim 26, wherein the fragment of step
(a)(i) is the V-domain of RAGE.

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28. The method of claim 26, wherein the fragment of step
(a)(i) or (a)(ii) is synthetic.

29. The method of claim 26, wherein the compound comprises
at least a portion of naturally occurring sRAGE peptide.

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30. The method of claim 26, wherein the compound is a
peptidomimetic.

31. The method of claim 26, wherein the compound is an
organic molecule.

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32. The method of claim 26, wherein the compound is a peptide, a nucleic acid or an inorganic chemical.
33. The method of claim 26, wherein the compound is a molecule of less than 10,000 daltons.
34. The method of claim 26, wherein the compound is an antibody or fragment thereof.
35. The method of claim 26, wherein the compound is a mutated RAGE peptide or a fragment thereof.
36. The method of claim 26, wherein the compound is a mutated sRAGE peptide or a fragment thereof.
37. The method of claim 26, wherein the compound is a mutated EN-RAGE peptide or a fragment thereof.
38. The method of claim 26, wherein the peptide of step (a)(i) is affixed to a solid surface.
39. The method of claim 26, wherein the peptide of step (a)(ii) is affixed to a solid surface.
40. The method of claim 26, wherein the peptide of step (a)(i) or (a)(ii) is detectably labeled.
41. The method of claim 40, wherein the detectable label comprises fluorescence, biotin, or radioactivity.
42. The method of claim 26, wherein the admixing occurs in a cell.
43. The method of claim 26, wherein the admixing occurs in an animal.

44. A compound identified by the method of claim 26, useful for the suppression of inflammation in a subject.

5 45. A compound identified by the method of claim 26, useful for the treatment of systemic lupus erythematosus or inflammatory lupus nephritis in a subject.

46. A previously unknown compound identified by the method of claim 26.

10 47. A method for inhibiting inflammation in a subject which comprises administering to the subject a compound capable of interfering with the interaction between EN-RAGE peptide and receptor for advanced glycation endproduct (RAGE) in the subject thereby inhibiting inflammation in the subject.

15 *Sub D1*
20 48. The method of claim 47, wherein the compound is an anti-EN-RAGE antibody or a fragment thereof or an anti-RAGE antibody or fragment thereof.

49. The method of claim 47, wherein the compound is an sRAGE peptide.

25 50. The method of claim 47, wherein the compound consists essentially of the ligand binding domain of sRAGE peptide or the ligand binding domain of EN-RAGE peptide.

30 *Sub D2*
51. The method of claim 47, wherein the compound is a nucleic acid molecule or a peptide.

35 52. The method of claim 51, wherein the peptide is an antibody or a fragment thereof.

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and the compound;

(b) measuring the amount of binding between the EN-RAGE protein and the second protein; and

(c) comparing the amount of binding measured in step (b) with the amount of binding between EN-RAGE and the second protein in the absence of the compound, wherein a reduction in the amount of binding indicates that the compound is capable of inhibiting the ability of EN-RAGE protein to bind with the second protein.

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